

Form PTO-1449 (Modified)

Atty Docket No.:

005158.P004X

Serial No.:

09/837,337

List of Patents and Publications Status

Applicants:

Li et al.

Filing Date:

April 17, 2001

(Use several sheets if necessary)

RECEIVED  
SEP 25 2001  
Technology Center 2600

## REFERENCE DESIGNATION

## U.S. PATENT DOCUMENTS

Exam. Initial	Date	Document Number	Name	Class	Sub-Class	Filing Date
1972	05/23/00	6,067,290	Paulraj et al.	370	329	07/30/99
	05/16/00	6,064,694	Clark et al.	375	224	09/30/97
	05/16/00	6,064,692	Chow	375	219	06/20/97
	04/18/00	6,052,594	Chuang et al.	455	450	04/30/97
	03/21/00	6,041,237	Farsakh	455	450	04/02/98
	12/21/99	6,005,876	Cimini, Jr. et al.	370	525	09/24/96
	10/26/99	5,973,642	Li et al.	342	378	04/01/98
1972	09/21/99	5,956,642	Larsson et al.	455	449	11/25/96

## FOREIGN PATENT DOCUMENTS

No.	Document No.	Date	Country	Name	Class	Sub-Class	Translation

## OTHER ART (Including Author, Title, Date, Pertinent Pages, etc.)

1972	BENDER et al., CDMA/HDR: A Bandwidth-Efficient High-Speed Wireless Data Service for Nomadic Users, IEEE Communications Magazine, July 2000, pp. 70-87.
	TSOULOS, G.V., Smart Antennas For Mobile Communication Systems: Benefits And Challenges, Electronics & Communication Engineering Journal, April 1999, pp. 84-94.
	SHAD et al., Indoor SDMA Capacity Using a Smart Antenna Basestation, 1997 IEEE, pp. 868-872.
	FARSAKH, CHRISTOF and NOSSEK, JOSEF A., On the Mobile Radio Capacity Increase Through SDMA, no date (after 1997).
	FRULLONE et al., PRMA Performance in Cellular Environments with Self-Adaptive Channel Allocation Strategies, IEEE Transactions on Vehicular Technology, November 1996, pp.657-665 Vol. 45, No. 4.
	XU, GUANGHAN and LI, SAN-QI, Throughput Multiplication of Wireless Lans for Multimedia Services: SDMA Protocol Design, 1994 IEEE, pp. 1326-1332.
1972	WARD, JAMES and COMPTON, R. TED, JR., High Throughput Slotted ALOHA Packet Radio Networks with Adaptive Arrays, IEEE Transactions on Communications, March 1993, pp. 460-470, Vol. 41, No. 3.

Examiner

Zhuo/Dele

Date Considered

4-21-04

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant



**Complete if Known**

*(use as many sheets as necessary)*

Application Number	09/837,337
Filing Date	April 17, 2001
First Named Inventor:	Xiaodong Li
Group Art Unit	2681
Examiner Name	Unassigned
Attorney Docket Number	005158.P004X

<b>Sheet</b>	<b>2</b>	<b>of</b>	<b>2</b>
--------------	----------	-----------	----------

Examiner  
Initials\*

Cite  
No<sup>1</sup>

Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published

 $T^2$ 

10-7-

**G**

Farsakh, C. et al., "Maximizing the SDMA Mobile Radio Capacity Increase by DOA Sensitive Channel Allocation", *Wireless Personal Communications*, Kluwer Academic Publishers, NL, vol. 11, no. 1, October 1999, pages 63-76, XP000835062, ISSN: 0929-6212

Examiner  
Signature

Henry DeLeon

Date	
Considered	

4-21-00

\*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication.

<sup>1</sup>Unique citation designation number. <sup>2</sup>Applicant is to place a check mark here if English language Translation is attached.

**Burden Hour Statement:** This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.**



Substitute for Form 1449A/PTO (Modified)

Complete if Known

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

2

2

Application Number

09/837,337

Filing Date

04/17/2001

First Named Inventor:

Xiaodong Li

Group Art Unit

2681

Examiner Name

Unassigned

Attorney Docket Number

005158.P004X

## OTHER ART - NO PATENT LITERATURE DOCUMENTS


Examiner  
Initials\*Cite  
No<sup>1</sup>

Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published

T<sup>2</sup>

R

WONG, C.Y., et al., *Multiuser OFDM With Adaptive Subcarrier, Bit, and Power Allocation*, IEEE Journal on Selected Areas in Communications, October 1999, IEEE Inc., New York, USA, Vol. 17, Nr. 10, pages 1747-1758, XP000854075, ISSN: 0733-8716 Sections I and II abstract.

Examiner  
Signature


Date

Considered



\*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication.

<sup>1</sup>Unique citation designation number. <sup>2</sup>Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



Substitute for Form 1449A/PTO (Modified) <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(use as many sheets as necessary)</i>				<b>Complete if Known</b>	
				Application Number	09/837,337
				Filing Date	04/17/2001
				First Named Inventor:	Xiaodong Li
				Group Art Unit	2681
				Examiner Name	Unassigned
				Attorney Docket Number	005158.P004X
Sheet	2	of	2	<b>RECEIVED</b> NOV 01 2002 Technology Center 2600	
<b>OTHER ART - NO PATENT LITERATURE DOCUMENTS</b>					
Examiner Initials*	Cite No <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published			
K-2  [Handwritten line]  K-2	Y	GRUENHEID, R. et al.: "Adaptive Modulation and Multiple Access for the OFDM Transmission Technique", Wireless Personal Communications, Kluwer Academic Publishers, NL, Vol. 13, NR. 1/2, Year 2000, pages 5-13 XP000894156, ISSN: 0929-6212.			
	Z	MOTEGI, M. et al.: "Optimum Band Allocation According to Subband Condition for BST-OFDM" 11 <sup>th</sup> IEEE International Symposium on Personal Indoor and Mobile Radio Communications, vol. 2, 18-21 September 2000, pages 1236-1240, XP002213669, Piscataway, NJ, USA, ISBN: 0-7803-6463-5.			
	AA	KAPOOR, S. et al.: "Adaptive Interference Suppression in Multiuser Wireless OFDM Systems Using Antenna Arrays" IEEE Transactions on Signal Processing, vol. 47, no. 12, December 1999, pages 3381-3391, XP000935422, IEEE, New York, USA, ISSN: 1053-587X.			
	BB	YE LI, et al.: "Clustered OFDM with channel estimation for high rate wireless data", Mobile Multimedia Communications, 1999. (MOMUC '99). 1999 IEEE International Workshop on San Diego, CA, USA, IEEE, US, 15 November 1999, pages 43-50, XP010370695, ISBN: 0-7803-5904-6.			
	CC	NOGUEROLES, R. et al.: "Improved Performance of a Random OFDMA Mobile Communication System" Vehicular Technology Conference, 1998. VTC 98. 48 <sup>th</sup> IEEE Ottawa, Ontario, Canada, 18-21 May 1998, (1998-05-18), pages 2502-2506, XP010288120, ISBN: 0-7803-4320-4.			
DD	KINUGAWA, Y. et al.: "Frequency and Time Division Multiple Access with Demand-Assignment Using Multicarrier Modulation for Indoor Wireless Communications Systems", IEICE Transactions on Communications, Institute of Electronics Information and Comm. Eng. Tokyo, Japan, vol. E77-B, NR. 3, March 1994, pages 396-402, XP000451014, ISSN: 0916-8516.				

Examiner Signature: <i>[Handwritten Signature]</i>	Date Considered: <i>9-21-04</i>
--	---------------------------------

\*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication.

<sup>1</sup>Unique citation designation number. <sup>2</sup>Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Substitute for Form 1449/PTO				<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <small>(Use as many sheets as necessary)</small>				Application Number	09/837,337
				Filing Date	April 17, 2001
				First Named Inventor:	Xiaodong Li
				Art Unit	2683
				Examiner Name	Not Yet Assigned
				Attorney Docket Number	005158.P004X
<b>U.S. PATENT DOCUMENTS</b>					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
D-2		US- 5,734,967	3/31/1998	Kotzin et al.	<div style="text-align: center;"> <b>RECEIVED</b>  JAN 29 2004  Technology Center 2600 </div>
		US- 5,886,988	3/23/1999	Yun et al.	
		US- 5,887,245	3/23/1999	Lindroth et al.	
		US- 5,933,421	8/3/1999	Alamouti, et al.	
		US- 6,061,568	5/9/2000	Dent	
		US- 6,108,374	8/22/2000	Balachandran et al.	
		US- 6,226,320 B1	5/1/2001	Hakkinen et al.	
		US- 6,366,195 B1	4/2/2002	Harel et al.	
		US- 6,477,158 B2	11/5/2002	Take	
		US- 2003/0067890 A1	4/10/2003	Goel et al.	
A-7		US- 2003/0169824 A1	9/11/2003	Chayat	

<b>FOREIGN PATENT DOCUMENTS</b>						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)				
D-2		JP 06029922	2/4/1994	Mitsuru et al.		

Examiner Signature: <i>[Signature]</i>	Date Considered: <i>4-21-04</i>
--	---------------------------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS.  
**SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.